Vanasse & Associates inc
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810

Ref: 10062

January 24, 2025

Ms. Lara Davis
ZBA Principal Assistant
Southborough Zoning Board of Appeals & Conservation Department
9 Cordaville Road
Southborough, MA 01772

Re: 2nd Traffic Engineering Peer Review
Proposed Multifamily Residential Development – 250 Turnpike Road/0 Parkerville Road
Southborough, Massachusetts

Dear Lara:

Vanasse & Associates, Inc. (VAI) has completed a review of the supplemental materials that have been submitted on behalf of FD 250 Turnpike, LLC (the "Applicant") in support of the proposed multifamily residential development to be located at 250 Turnpike Road (Route 9) in Southborough, Massachusetts (hereafter referred to as the "Project"). This information was prepared in response to the comments that were raised on our December 23, 2024 *Traffic Engineering Peer Review* letter and consisted of a letter prepared by AK Associates dated January 21, 2025.

Based on our review of the supplemental materials, the information provided is responsive to the comments that were raised in our December 23, 2024 letter; however, revised Site Plans were not provided and are required in order verify that the requested information and plan details have been added. For reference, listed below are the comments that were identified in our letter followed by a summary of the information submitted on behalf of the Applicant, with additional comments indicated in **bolded** text for identification.

October 2023 Traffic Impact Study (TIS)/December 2024 Traffic Impact Comparison (TIC)

Comment T1: *Using trip-generation statistics published by the Institute of Transportation Engineers (ITE)[1] for Land Use Code 215, Single-Family Attached Housing, applied to 32 dwelling units results in the following traffic characteristics for the Project shown in Table 1:*

[1] *Trip Generation*, 11th Edition; Institute of Transportation Engineers; Washington, DC; 2021.

Table 1
Project Trip-Generation Summary

Time Period	*Vehicle Trips*		
	Entering	*Exiting*	***Total***
Average Weekday:	*97*	*97*	***194***
Weekday Morning Peak-Hour:	*3*	*8*	***11***
Weekday Evening Peak-Hour:	*9*	*6*	***15***
Saturday Midday Peak-Hour:	*9*	*9*	***18***

These calculations differ from those presented in the December 2024 TIC and should be reviewed by the Applicant's Traffic Engineer.

Response: The Applicant's Traffic Engineer offered that the trip-generation calculations that were presented in the December 2024 TIC were intended to provide a comparison with the trips associated with the revised site plan (32 townhouses) and using the current edition of the ITE Trip Generation Manual.

We did not take exception with the intent of the tables. Our comment was offered to allow for a follow-up review of the trip-generation calculations as the fitted curve equations should have been used vs. the average rate where: i) a fitted curve equation is provided; and ii) there are more than 20 data points. That being said, the difference was not material (less than 5 vehicle trips) and, therefore, we did not request a response.

Comment T2: Table 2 compares the traffic characteristics of the Project and those of the modifications that are proposed by Ferris Development Group for the existing office building to those of existing office building at full occupancy:

Table 2
Trip-Generation Comparison

Time Period	*Vehicle Trips*			
	(A) Proposed Residential Development (32 units)[a]	*(B) Proposed Modifications to 250 Turnpike Rd.*[b]	*(C) Existing Office Building*[c]	***(A+B-C) Difference***
Average Weekday:	*194*	*222*	*690*	***-274***
Weekday Morning Peak-Hour:	*11*	*29*	*100*	***-60***
Weekday Evening Peak-Hour:	*15*	*36*	*101*	***-50***
Saturday Midday Peak-Hour:	*18*	*27*	*29*	***+16***

[a]*Based on ITE LUC 215, Single-Family Attached Housing (32 dwelling units).*
[b]*Based on ITE LUC 151, Mini-Warehouse (55,000 sf) and LUC 180, Specialty Trade Contractor (14,400 sf).*
[c]*Based on ITE LUC 710, General Office Building (55,000 sf).*

These calculations differ from those presented in the December 2024 TIC and should be reviewed by the Applicant's Traffic Engineer. That being said, we agree with the overall conclusion that the proposed modifications to the existing office building and the construction of the Project will result in a significant reduction in traffic on an average weekday and during the weekday peak hours. During the Saturday midday peak-hour, it is expected that there will be a minor increase in traffic that would not be considered significant.

Response: The Applicant's Traffic Engineer offered that the trip generation calculations that were presented in the December 2024 TIC developed using the current edition of the Trip Generation Manual and that the relevant pages from the Trip Generation Manual were attached for reference.

Again, we did not take exception with the intent of the tables. Our comment was offered to allow for a follow-up review of the trip-generation calculations as the fitted curve equations should have been used vs. the average rate where: i) a fitted curve equation is provided; and ii) there are more than 20 data points. As noted in our original comment, the difference would not change the intent of the comparison, and, therefore, we did not request a response.

Comment T3: Based on the net difference in trips that are shown in Table 2, a formal traffic operations analysis (i.e., review of motorist delays and vehicle queuing) is not warranted for the Project.

Response: **No response required.**

Comment T4: A review of the MassDOT Top Crash Locations database indicates that the intersection of Route 9 at Parkerville Road is a high crash location for the 2019-2021 reporting period and Highway Safety Improvement Program (HSIP) eligible. The Applicant's engineer should review the MassDOT crash data for the 2019-2021 reporting period and identify the predominant crash patterns and potential safety enhancements that could be completed as a part of the Project to the extent that the improvements are limited to signs and pavement markings and subject to receipt of all necessary rights, permits and approvals.

Response: The Applicant's Traffic Engineer provided motor vehicle crash data for the intersection of Route 9 at Parkerville Road obtained from MassDOT for the 4.5 year period between January 1, 2019 and June 30, 2023. Based on a review of this data, 11 motor vehicle crashes were reported at the intersection over the review period, or an average of approximately 2.4 crashes per year, the majority of which were reported as angle, rear-end or sideswipe crashes that resulted in property damage only. Traffic count data was not available for Parkerville Road to perform a motor vehicle crash rate calculation (i.e., number of motor vehicle crashes per million entering vehicles (c/mev)); however, using traffic volume data obtained from MassDOT for Route 9 eastbound and assuming an hourly volume of 50 vehicles per hour (vph) for Parkerville Road, the calculated motor vehicle crash rate was found to be below the MassDOT average crash rate for similar intersections.

The reported crash types were dispersed to the extent that there were no defined trends that are indicative to a specific safety defect at the intersection. No further response required.

Comment T5: *In addition to the recommendations that were provided as a part of the October 2023 TIS, we would suggest that the Applicant implement a Transportation Demand Management (TDM) program that is inclusive of the following elements:*

- *Assign a transportation coordinator for the Project who may also have other responsibilities to coordinate the TDM program;*
- *Information regarding public transportation services should be made available to residents and include maps, schedules and fare information;*
- *A "welcome packet" should be provided to new residents providing the name and contact information for the transportation coordinator and detailing available public transportation services, bicycle and walking alternatives, and other commuting options; and*
- *Consult with the MWRTA to discuss options to establish transit service to the Project.*

Response: The Applicant's Traffic Engineer indicated that the Project may benefit from the implementation of the identified TDM measures.

We would recommend that the identified TDM measures be included as a condition of the approval of the Project.

Site Plans

Comment S1: *A vehicle turning analysis should be provided using the AutoTurn© software for a service/delivery vehicle (SU-30 design vehicle) and for the Southborough Fire Department design vehicle. The turning analysis should depict all maneuvers required to enter and exit the Project site from Route 9 and include circulation within the cul-de-sac area.*

Response: The Applicant will provide a Swept Path Analysis for a 30-foot Single Unit delivery truck and a 45-foot fire engine.

Comment resolved pending receipt of the requested turning analysis.

Comment S2: *Given the depth of the Project site, consideration should be given to establishing a secondary access for emergency vehicles from Parkerville Road. This could take the form of a gated access over the waterline easement.*

Response: The Applicant's Traffic Engineer stated that the length of the driveway will be 982 feet long, which is less than the 1,000 foot length for a dead-end roadway, and the 32 residential units that are proposed represents a small development.

We continue to suggest that development of a secondary access that does not require emergency vehicles to travel past the Project site to reverse directions on Route 9 to access the Project. That being said, we defer to the Fire Chief as to the adequacy of the access to the Project site for emergency vehicles.

Comment S3: *The driveways to the residential units should be a minimum of 21 feet long measured between the garage door and the far edge of the sidewalk (edge closest to the residence) where a sidewalk is provided and a minimum of 23 feet measured between the garage door and the edge of the traveled-way in locations without a sidewalk.*

Response: The length of the driveways will adhere to the recommended dimensions.

Comment resolved pending receipt of the revised Site Plans showing typical driveway dimensions.

Comment S4: *Verify that the centerline of the proposed roadway does not exceed 8 percent and that a leveling area that does not exceed 2 percent is provided approaching the existing parking lot that serves 250 Turnpike Road.*

Response: The Applicant's Traffic Engineer stated that the centerline grade is "nearly 8 percent" and that a leveling area that will not exceed 2 percent is provided approaching the parking lot to 250 Turnpike Road.

Comment resolved pending receipt of the revised Site Plans showing the centerline profile and grades of the proposed roadway.

Comment S5: *Circulation within the cul-de-sac area should be in a one-way counterclockwise direction. Signs and pavement markings should be provided to regulate the one-way traffic flow.*

Response: Traffic circulation at the cul-de-sac will be one-way counterclockwise and will be signed accordingly.

Comment resolved pending receipt of the revised Site Plans showing the requested information.

Comment S6: *The sight triangle areas for the driveway that serves 250 Turnpike Road and that will be extended to serve the Project should be shown on the Site Plans along with a note to indicate: "Signs, landscaping and other features located within sight triangle areas shall be designed, installed, and maintained so as not to exceed 2.5-feet in height. Snow accumulation (windrows) located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed."*

Response: The Applicant's Engineer indicated that the sight triangle areas are shown on the Site Plans along with the requested note.

Comment resolved pending receipt of the revised Site Plans showing the requested information.

Comment S7: *A note should be added stating: "All Signs and pavement markings to be installed within the Project site shall conform to the applicable specifications of the Manual on Uniform Traffic Control Devices (MUTCD).[2]"*

Response: The requested note has been added to the Site Plans.

Comment resolved pending receipt of the revised Site Plans showing the requested note.

Comment S8: *Consideration should be given to developing a sidewalk or pedestrian path to connect the proposed sidewalk that is shown along the west side of the proposed driveway to Route 9. This connection should be coordinated with the school bus stop location for the Project defined by the Southborough School Department.*

Response: The Applicant's Traffic Engineer indicated that a review of alternatives to construct a sidewalk to connect the Project to Route 9 was undertaken and it was determined that a connection was not feasible.

The Applicant should consult with the Southborough School Department to determine where the bus stop will be located for the Project and if school buses will be entering the property.

This concludes our review of the materials that have been submitted to date in support of the Project. Written responses to our comments pertaining to the Site Plans should be provided so that we can continue our review on behalf of the Town. If you should have any questions regarding our review, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.

Jeffrey S. Dirk

Jeffrey S. Dirk, P.E., PTOE, FITE
Managing Partner

Professional Engineer in CT, MA, ME, NH, RI and VA

JSD/jsd

[2]*Manual on Uniform Traffic Control Devices* (MUTCD), 11th Edition; Federal Highway Administration; Washington, DC; December 2023.